AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

32 (currently amended). A process for the detection of a specific nucleic acid sequence comprising:

(a) forming a first composition comprising

(i) a sample,

(ii) a first oligonucleotide primer which comprises a promoter sequence,

(iii) a second oligonucleotide primer,

(iv) a DNA-directed RNA polymerase,

(v) an RNA-directed DNA polymerase,

(vi) a DNA-directed DNA polymerase, and

(vii) a ribonuclease that hydrolyzes RNA of an RNA-DNA hybrid without hydrolyzing single or double-stranded RNA or DNA;

(b) incubating the ~~reaction mixture~~ first composition for a sufficient time to amplify said specific nucleic acid sequence to form ~~an amplified nucleic acid sequence~~ a mixture comprising an amplified nucleic acid sequence;

(c) forming a second ~~mixture~~ composition by adding to a sample of said ~~amplified nucleic acid sequence~~ mixture the following reagents

(i) at least one detection probe sequence which specifically hybridizes to said amplified nucleic acid sequence, said

detection probe sequence being labeled with an electrochemiluminescent species,

(ii) at least one capture probe sequence which specifically hybridizes to said amplified nucleic acid sequence, said capture probe sequence being labeled with a binding species, and

(iii) a solid phase coated with a binding partner of said binding species;

(d) incubating said second ~~mixture~~ composition for a time sufficient to allow hybridization of said probes to said amplified nucleic- acid sequence and to allow binding of said binding species to said binding partner so as to form a solid phase-bound hybridization complex; and

(e) detecting said specific nucleic acid sequence by measuring electrochemiluminescence from said solid phase-bound hybridization complex ~~by using said electrochemiluminescent species~~.

33 (previously presented). The process of claim 32, wherein said solid phase is a magnetic bead.

34 (currently amended). The process of claim 32, wherein the ~~binding species/binding partner pair~~ binding species and the binding partner are ~~selected from the group consisting of biotin/avidin, biotin/streptavidin, and digoxigenin/anti-digoxigenonin digoxigenin~~ biotin and avidin, or biotin and streptavidin, or digoxigenin and anti-digoxigenin.

35 (previously presented). The process of claim 32, wherein the binding species is biotin and the solid phase is a streptavidin-coated magnetic bead.

36 (currently amended). The process of claim 32, wherein said amplified nucleic acid sequence is the anti-sense copy of the specific nucleic acid sequence and wherein said amplification of said specific nucleic acid sequence is carried out under conditions which permit

(i) said second oligonucleotide primer to hybridize to an RNA template which comprises the specific nucleic acid sequence or an anti-sense copy of the specific nucleic acid sequence,

(ii) said RNA-directed DNA polymerase to utilize said RNA template to synthesize a DNA template by extension of said second oligonucleotide primer and thereby form an RNA-DNA hybrid intermediate,

(iii) said ribonuclease to hydrolyze RNA contained in said RNA-DNA hybrid intermediate,

(iv) said first oligonucleotide primer to hybridize to said DNA template,

(v) said DNA-directed DNA polymerase to utilize said DNA template to synthesize a double-stranded DNA product by extension of said first ~~olignucleotide~~ oligonucleotide primer, said ~~double stranded~~ double-stranded DNA product comprising said promoter, and

(vi) said DNA-directed RNA polymerase to recognize said promoter and transcribe said double-stranded DNA product so as to form more copies of said RNA ~~first~~ template.

37 (previously presented). The process of claim 32, wherein said electrochemiluminescent species comprises ruthenium-tris-bipyridine.

38-43 (cancelled).